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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>13 October 2005</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-12</u> is/are pending in the application.

     4a) Of the above claim(s) <u>1-6</u> is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>7,8,10 and 11</u> is/are rejected.

7) ☒ Claim(s) <u>9 and 12</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>18 April 2005</u> is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☒ All   b) ☐ Some * c) ☐ None of:

         1. ☒ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____.

         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date <u>4/18/2005</u>.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers

have been placed of record in the file.

Information Disclosure Statement

2.   The references listed in the Information Disclosure Statement(s) filed on 4/18/2005 have

been considered by the examiner (see attached PTO-1449 form or PTO/SB/08A and 08B forms).

Oath/Declaration

3.   The oath or declaration is defective. A new oath or declaration in compliance with 37

CFR 1.67(a) identifying this application by application number and filing date is required. See

MPEP §§ 602.01 and 602.02.

> The oath or declaration is defective because:
> It does not state that the person making the oath or declaration acknowledges the duty to
> disclose to the Office all information known to the person to be **material to patentability**
> as defined in **37 CFR 1.56**. (Note **bolded** sections)

Drawings

4.   The drawings are objected to because there are no labels for blocks 1-8 in Figure 1; block

S4 in Figure 3; and blocks D2, D5, D7, and D9 in Figure 4. These blocks need to have

descriptive labels under 37 CFR 1.84(n) and 1.84(o). In Figure 1, for example, block 1 may be

labeled as "control unit" and block 8 can be labeled "host computer."

5.   The drawings are objected to under 37 CFR 1.83(a) because they fail to show the

connection between blocks S6 and S7 as described in the specification (page 7, lines 13-15). It is

also unclear how the method returns to step S4 as described in the specification (page 6, lines 25-

27). Any structural detail that is essential for a proper understanding of the disclosed invention

should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance

with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the

application. Any amended replacement drawing sheet should include all of the figures appearing

on the immediate prior version of the sheet, even if only one figure is being amended. The figure

or figure number of an amended drawing should not be labeled as "amended." If a drawing

figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and

where necessary, the remaining figures must be renumbered and appropriate changes made to the

brief description of the several views of the drawings for consistency. Additional replacement

sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet

submitted after the filing date of an application must be labeled in the top margin as either

"Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not

accepted by the examiner, the applicant will be notified and informed of any required corrective

action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   **Claims 7, 8, 10, and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Bosch (NPL - CAN specification) in view of Slivkoff et al. (US 2004/0170195) and Hamilton et

al. (US 6,038,607).

Regarding **claim 7**, Bosch discloses a method (CAN protocol, page 4) for transmitting a data block from a data source to a data sink on a bus that supports a transmission of a frame having a variable and limited number n of data elements, comprising:

transmitting, from the data sink to the data source, control information that specifies at least a number N of data elements contained in a block to be transmitted (Remote frame, Data Length Code, Page 15);

Bosch fails to expressly disclose (i) if N>n, transmitting int (N/n) frames, each containing n data elements of the block to be transmitted and transmitting a frame having (N mod n) data elements of the block to be transmitted from the data source to the data sink, int (N/n) being the largest integer which is less than or equal to N/n; and

(ii) recognizing the transmission of the block as complete by the data sink if the number of data elements received in the step of transmitting int (N/n) frames agrees with the number N specified in the control information.

With respect to (i), Slivkoff et al. disclose CAN application layer (CAL) is a high-level protocol that extends the capabilities of CAN. CALs permit transmission of messages which exceed the 8 byte limit inherent to CAN frames by dividing each message into multiple packets, which each packet being transmitted as a single CAN Frame consisting of a maximum of 8 data bytes (page 4, table section CAL).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the CAN protocol of Bosch with the CAN application layer teaching of Slivkoff et al. since it would increase the capabilities of the CAN protocol by enabling transmission of messages greater than 8 bytes.

With respect to (ii), Hamilton et al. teaches control information indicating that a packet constitutes a particular group and determines whether all packets constituting the group have been received (column 4, lines 15-35).

Because both Hamilton et al. and the combination of Bosch and Slivkoff et al. both teach using control associated with sending groups packets, it would have been obvious to one of ordinary skill in the art to substitute one method for the other to achieve the predictable result of sending control information indicating the total number of packets associated with a group and using that information to determine if all of the packets of the group have been received.

Regarding **claim 8**, Bosch and Slivkoff et al. teach everything claimed as applied to claim 7 above, but fail to expressly disclose wherein if N=n, the data source transmits a single frame having N data elements, and the data sink recognizes the block as complete already after receiving the single frame.

Nevertheless, Bosch teach the maximum data payload of a packet is 8 bytes (pages 12 and 15).

Hamilton et al. teaches that control information indicates that a packet constitutes a particular group. The control information is compared with the counted number of packets in determining whether all packets constituting the group have been received (column 4, lines 28-35). This scheme implicitly includes the situation for a group of size 1.

Therefore, it would have been obvious to one of ordinary skill in the art to specify in the system applied to claim 7 that if all the data to be sent is equal to the maximum size of a data packet, that a single data block is sent, effectively using only packet, and that the control information indicates the group is of size one, so that the receiver knows to expect only one

packet/block, since this is an obvious variant of the method applied to claim 7, and is implicit in

the teaching of Hamilton et al.

Regarding **claim 10**, Bosch teaches everything claimed as applied to claim 7 above, and

further discloses wherein the data source forms the block from a plurality of parameters specified

in the control information (remote frame request transmission of the data frame with the same

identifier, page 10, and data length code, page 15).

Regarding **claim 11**, Bosch teaches everything claimed as applied to claim 7 above, and

further discloses wherein the bus is a CAN bus (controller area network, page 4).

Allowable Subject Matter

8.   Claims 9 and 12 are objected to as being dependent upon a rejected base claim, but would

be allowable if rewritten in independent form including all of the limitations of the base claim

and any intervening claims.

9.   The following is a statement of reasons for the indication of allowable subject matter:

The present invention comprises a method for transmitting a block of data from a data source to

a data sink on a bus, comprising: transmitting control information; if the total number of data

elements exceeds the size of a data frame; transmitting the data in multiple frames; and

recognizing the data transmission is complete if the number of data elements received agrees

with a number specified in the control information. The closest prior art, Bosch (NPL), Slivkoff

et al. (US 2004/0170195), and Hamilton et al. (US 6,038,307), disclose a similar method that

extends the CAN protocol with CAN application layer functionality to permit transmission of

messages greater than the 8-byte CAN frame limit, and uses control information to determine if a

received message is complete. However, Bosch, Slivkoff et al. and Hamilton et al., disclose

neither that the data source transmits a data block at a point in time specified in the control information nor that the method is used in a development environment for a controller circuit, the data source being the controller circuit and the data sink being a host computer. These limitations respectively distinguish claims 9 and 12, over the prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID HUANG whose telephone number is (571)270-1798. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on (571) 272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSH/dsh
March 31, 2008
/David Huang/   /Shuwang Liu/Supervisory Patent Examiner, Art Unit 2611
Examiner, Art Unit 2611